

respectfully requested to contact Matthew J. Lattig (Reg. No. 45,274) at (703) 205-8000 in the Washington, D.C. area to arrange for a mutually convenient time and date at which to conduct the interview. Of course, if the Examiner is convinced of the allowability of each of claims 1-36, no such interview is necessary.

**AMENDMENTS TO THE CLAIMS**

Claims 1 and 14 have been amended, by the present Preliminary Amendment, to clarify the distinction between the claims in the prior art. Regarding the Examiner's previous applied rejections, Applicants further offer the following additional comments.

**PRIOR ART REJECTIONS**

The Examiner had previously rejected claims 1-4, 7-16, 20-25 and 27-34 under 35 U.S.C. §103 as being unpatentable over Tateishi et al. in view of Takagi. This rejection is respectfully traversed for the reasons previously set forth in the Amendment of June 29, 2001, and is further traversed for the following additional reasons.

In the Examiner's Office Action, the Examiner attempts to cite Takagi for a teaching of a plurality of detachably attached modules, citing element 14, for example, of Fig. 1. Applicants respectfully submits that the items 14, however, are not detachably attached modules and instead are wafer transfer mechanisms (robots).   
Therefore, Takagi fails to disclose an apparatus comprising a plurality of detachably attached modules as claimed in claim 1, which are piled up adjacent to, but spaced separately from one another in a substantially vertical direction, such that the modules

are capable of being attached and detached to/from the substrate transfer section, independent of one another.

In addition, regarding Tateishi et al., the Examiner alleges that chambers 53-55 are "transfer modules" and that chamber 52 is a "transfer section". The Examiner attempts to modify the Tateishi et al. substrate processing apparatus by implementing the Takagi substrate processing apparatus. However, even assuming *arguendo* that the references could be combined, which Applicants do not admit, the alleged combination would still fail to meet the invention as claimed, for at least the following reasons.

In Tateishi et al., the chamber 52 and the chambers 53-55 are arranged in the sealed casing 51 in the direction of movement of a base plate 3 to be treated (col. 5, lines 42-48). The base plate 3 is transferred from the chamber 52 to chamber 55 by the conveyer belts 65, 66, 72, 73, 78, 79, 87 and 88 in a straight line in the transfers direction. That is, each alleged transfer module 53-55 requires one chamber 52 in a straight line in a transfers direction, with chambers 52 and 53-55 being arranged in the sealed casing 51.

Therefore, even if Tateishi et al. were modified by implementing the Takagi substrate processing apparatus as the Examiner alleges, to reduce floor area and to easily install more systems as alleged by the Examiner, at best an apparatus would be achieved wherein the plurality of cases 51 would each have chambers 52 (alleged transfer section) and chambers 53-55 (alleged transfer modules) piled up separately in a substantially vertical direction. That is, the obtained apparatus would include a

plurality of transfer sections, each for transferring substrates to the transfer section of the same height. The apparatus according to the present invention includes a first substrate transfer device, provided in a substrate transfer section, for transferring substrates to the plurality of modules, which could not be obtained by the aforementioned modification.

Applicants have amended both claims 1 and 14 to clarify this distinction, by indicating that the plurality of modules are piled up adjacent to, but spaced separately from one another in a substantially vertical direction "such that said plurality of modules are capable of being attached to and detached from said substrate transfer section independent of one another. This cannot be achieved by the alleged combination of Tateishi et al. and Takagi as cited by the Examiner, even assuming *arguendo* that they could be combined. Accordingly, withdrawal of the Examiner's rejection is respectfully requested.

The Examiner has further rejected additional claims of the present application in view of the alleged referenced combination and further in view of one of Lee, or Yamazaki. It is respectfully submitted that even assuming *arguendo* either one or both of Lee and/or Yamazaki could be combined with either one or both of Tateishi et al. and Takagi, which Applicants do not admit, the teaches of both Lee and Yamazaki would fail to make up for at least the previously mentioned deficiencies of the alleged combination of Tateishi et al. and Takagi with regard to each of independent claims 1 and 14. Accordingly, for at least the aforementioned reasons, Applicants respectfully

request withdrawal of the Examiner's rejections and allowance of each of the pending claims in connection with the present application.

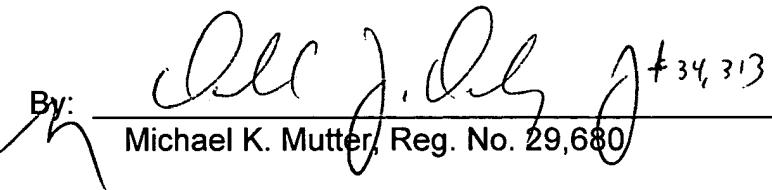
Accordingly, in view of the above amendments and remarks, and in view of the amendments and remarks set forth in the Amendment of June 29, 2001, Applicants respectfully request withdrawal of all outstanding rejections and allowance of each of claims 1-36 in connection with the present application.

**CONCLUSION**

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By:   
Michael K. Mutter, Reg. No. 29,680

P.O. Box 747  
Falls Church, VA 22040-0747  
(703) 205-8000

MKM/DJD:kna

**MARKED-UP VERSION OF CLAIMS**

1. (Twice Amended) A substrate processing apparatus, comprising:
  - a substrate transfer section;
  - a plurality of modules, each of said plurality of modules being detachably attached to said substrate transfer section; and
    - a. first substrate transfer device, provided in said substrate transfer section, for transferring substrates to said plurality of modules,

wherein said plurality of modules are piled up adjacent to, but spaced separately from one another in a substantially vertical direction such that said plurality of modules are capable of being attached to and detached from said substrate transfer section independent of one another,

wherein each of said plurality of modules comprises:

      - a substrate processing chamber, having a hermetic structure, for processing said substrates;
      - an intermediate chamber having a hermetic structure and provided between said substrate processing chamber and said substrate transfer section;
      - a first valve provided between said substrate processing chamber and said intermediate chamber, said first valve capable of establishing hermetic isolation between said substrate processing chamber and said intermediate chamber when closed, and capable of allowing said substrates to pass therethrough when opened; and

a second valve provided between said intermediate chamber and said substrate transfer section, said second valve capable of establishing hermetic isolation between said intermediate chamber and said substrate transfer section when closed, and capable of allowing said substrates to pass therethrough when opened, and

wherein said intermediate chamber is provided with a second substrate transfer device for transferring said substrates to said substrate processing chamber.

14. (Twice Amended) A substrate processing apparatus, comprising:

a substrate transfer section;

a plurality of modules, each of said plurality of modules being detachably mounted to said substrate transfer section; and

a first substrate transfer device, provided in said substrate transfer section, for transferring substrates to said plurality of modules,

wherein said plurality of modules are piled up adjacent to, but spaced separately from one another in a substantially vertical direction such that said plurality of modules are capable of being attached to and detached from said substrate transfer section independent of one another,

wherein each of said plurality of modules comprises:

a substrate processing chamber, having a hermetic structure, for processing said substrates;

first and second intermediate chambers provided between said substrate processing chamber and said substrate transfer section, each having a hermetic structure, said first intermediate chamber being located closer to said

substrate processing chamber than said second intermediate chamber, and said second intermediate chamber being located closer to said substrate transfer section than said first intermediate chamber;

    a first valve provided between said substrate processing chamber and said first intermediate chamber, said first valve capable of establishing hermetic isolation between said substrate processing chamber and said first intermediate chamber when closed, and capable of allowing said substrates to pass therethrough when opened;

    a second valve provided between said first intermediate chamber and said second intermediate chamber, said second valve capable of establishing hermetic isolation between said first intermediate chamber and said second intermediate chamber when closed, and capable of allowing said substrate or said substrates to pass therethrough when opened; and

    a third valve provided between said second intermediate chamber and said substrate transfer section, said third valve capable of establishing hermetic isolation between said second intermediate chamber and said substrate transfer section when closed, and capable of allowing said substrates to pass therethrough when opened.,

    wherein said second intermediate chamber is provided with a substrate holding device capable of holding said substrates, and

wherein said first intermediate chamber is provided with a second substrate transfer device capable of transferring said substrates between said substrate holding device and said substrate processing chamber.